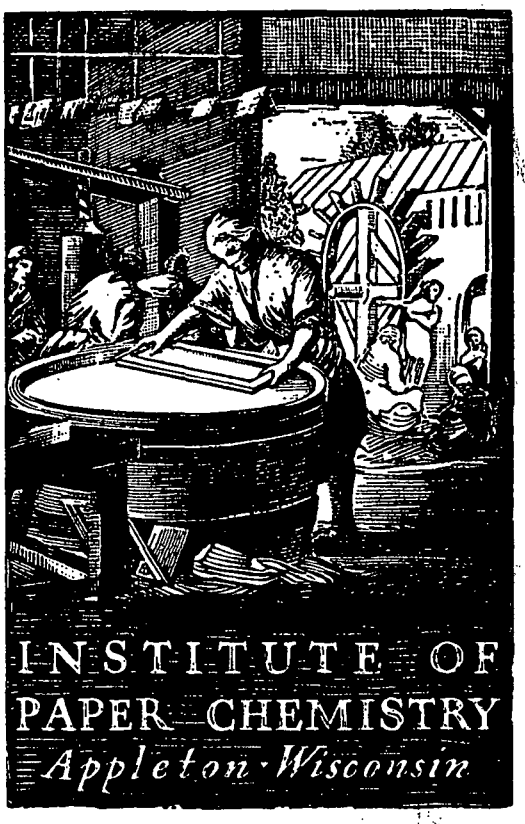

CONTINUOUS BASELINE STUDY

Project 1108-13

Report 177

A Progress Report

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

June 1, 1962

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

INTRODUCTION

As requested by the Technical Committee of the Fourdrinier Kraft Board Institute, Inc., the reports pertinent to the continuous baseline study on 42-lb. fourdrinier kraft linerboard are now being prepared by The Institute of Paper Chemistry on a bimonthly basis instead of the previous monthly basis. This new system was initiated on August 1, 1961. This report is the fifth under the new system and presents results obtained during the months of April and May, 1962.

TABLE I

SUMMARY OF COMPOSITE MILL AVERAGES--APRIL AND MAY, 1962

Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	Elmendorf Tear, g./sheet	
				In Machine	Cross Machine
A	42.1	13.5	114	267	364
B	43.6	12.8	108	377	412
C	42.1	12.1	112	287	328
D	43.6	12.4	110	298	363
E	42.3	12.5	112	328	365
F	42.9	13.1	108	330	387
G	No samples submitted.				
H	42.8	12.7	109	322	355
I	42.5	12.1	107	341	355
J	43.6	12.5	104	363	406
K	42.9	11.8	108	352	407
L	43.1	12.3	110	326	392
M	42.0	12.4	110	387	422
N	42.8	13.4	108	329	389
O	42.9	12.5	107	300	357
P	No samples submitted.				
Q	42.3	13.4	108	301	360
S	No samples submitted.				
T	42.6	12.8	109	303	380
U	43.1	13.4	103	323	364
V	42.9	12.0	107	296	360
Current FKI Average:	42.8	12.7	109	330	376
Cumulative FKI Average:	43.0	12.6	112	323	369
FKI Index, %	99.5	100.8	97.3	102.2	101.9

PRESENTATION AND DISCUSSION OF TEST RESULTS

Each sample lot received for evaluation during April and May was evaluated for basis weight, caliper, bursting strength, and Elmendorf tearing strength. The average strength results for each mill may be seen in Table I and are graphically presented in Fig. 1 to 5. In addition to a comparison of the current mill averages for the various tests, Table I also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. For each test, the current mill average represents the average obtained on all sample lots evaluated during a given period, the current F.K.I. average represents the average of the current mill averages, and the cumulative F.K.I. average represents the average of the current F.K.I. averages for the previous twelve months excluding the current period. The F.K.I. index expressed in per cent is the ratio of the current F.K.I. average to the cumulative F.K.I. average.

In Table II, a tabulation of the number of sample lots submitted by each mill during April and May is shown.

Supplementary to the basis weight data given in Table I, a tabulation is given in Table III of the amount by which the basis weight average for each mill varies from the 42-lb. specification set forth in Rule 41.

Shown below from Table I are the maximum and minimum current mill averages for each test and also the current and cumulative F.K.I. averages.

TABLE II

NUMBER OF SAMPLE LOTS SUBMITTED BY EACH MILL
DURING APRIL AND MAY, 1962

Mill Code	Number of Sample Lots
A	2
B	7
C	8
D	6
E	9
F	6
G	0
H	8
I	6
J	5
K	7
L	8
M	2
N	6
O	16
P	0
Q	8
S	0
T	9
U	7
V	2
Total	122

TABLE III

PERCENTAGE DEVIATION FROM 42-LB. BASIS WEIGHT SPECIFICATION

Mill Code	
A	+0.2
B	+3.8
C	+0.2
D	+3.8
E	+0.7
F	+2.1
G	--
H	+1.9
I	+1.2
J	+3.8
K	+2.1
L	+2.6
M	0.0
N	+1.9
O	+2.1
P	--
Q	+0.7
S	--
T	+1.4
U	+2.6
V	+2.1

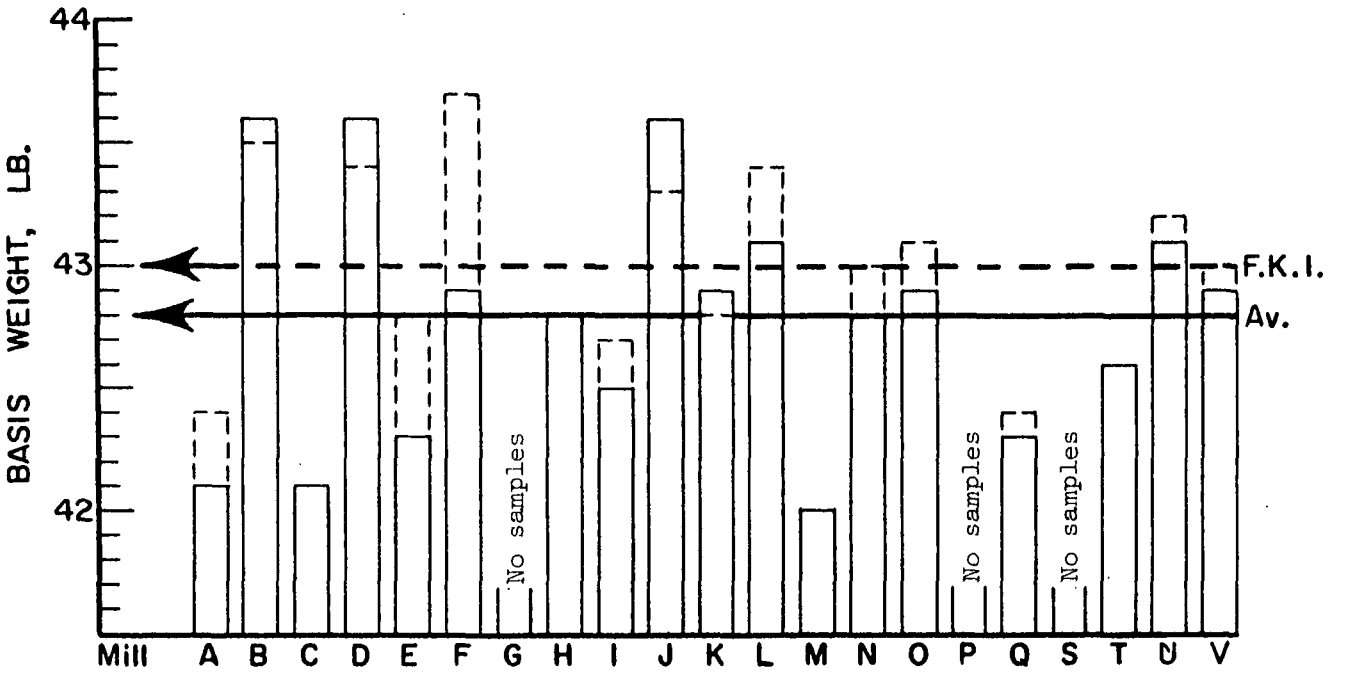

Figure 1. Comparison of Basis Weight Results

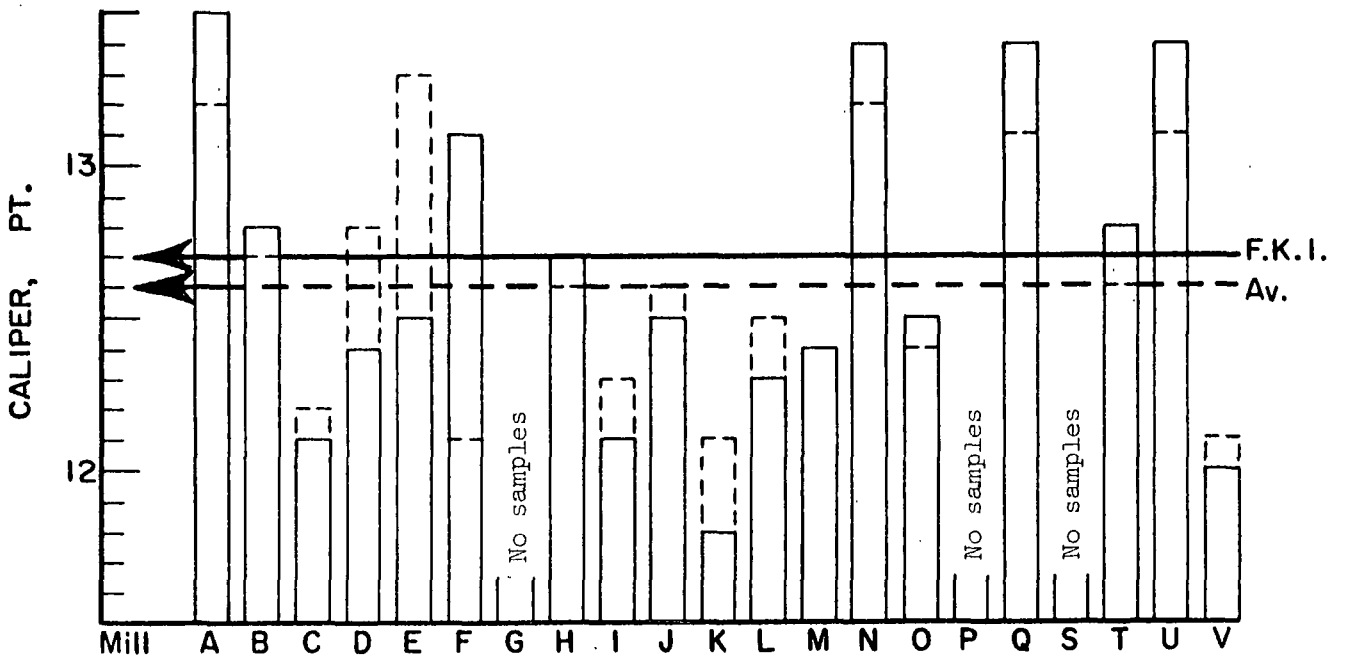

Figure 2. Comparison of Caliper Results

——— Current mill average

- - - - - Cumulative mill average

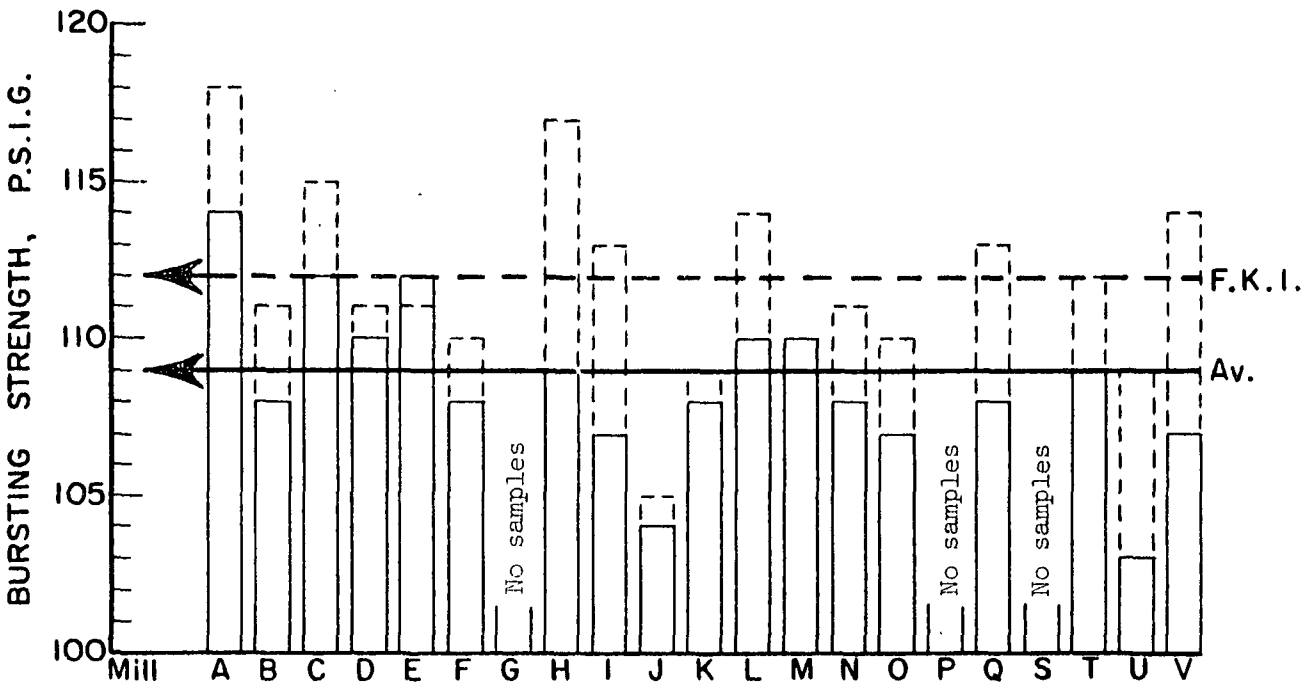

Figure 3. Comparison of Bursting Strength Results

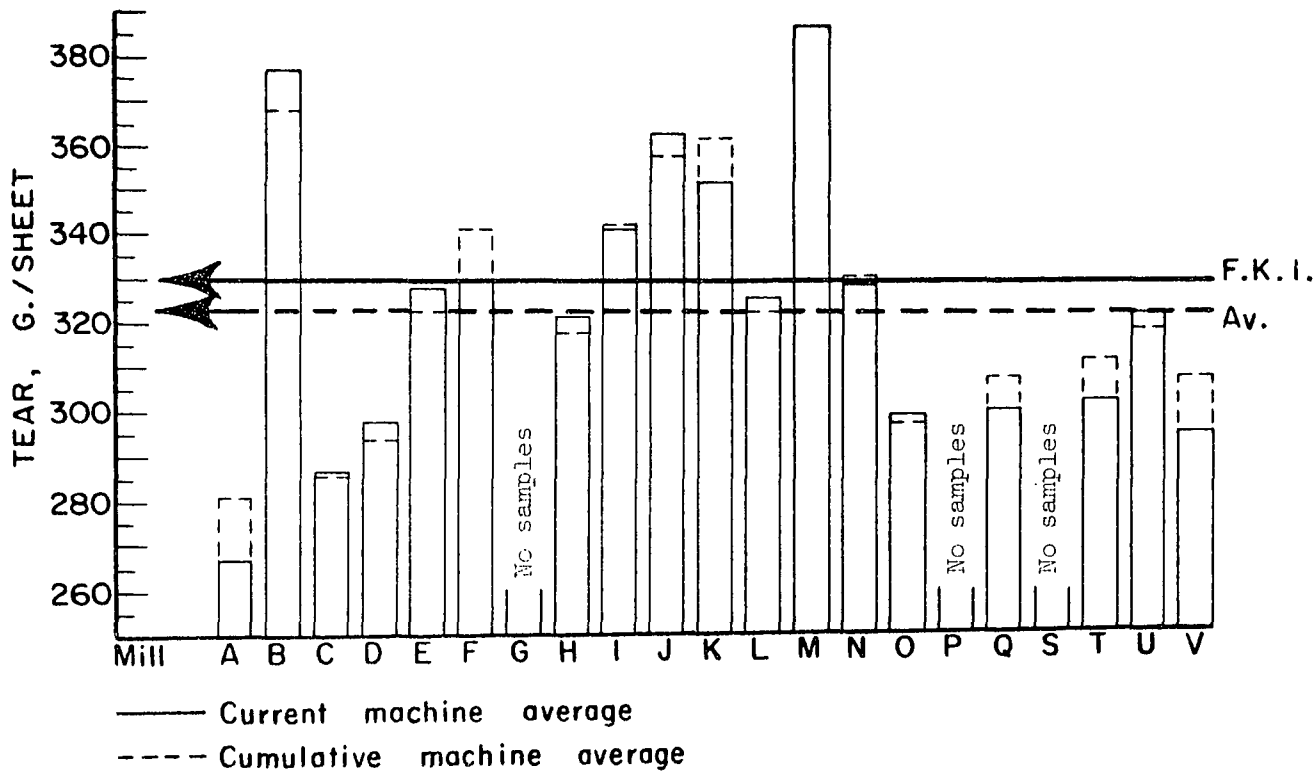

Figure 4. Comparison of Machine-Direction Tear Results

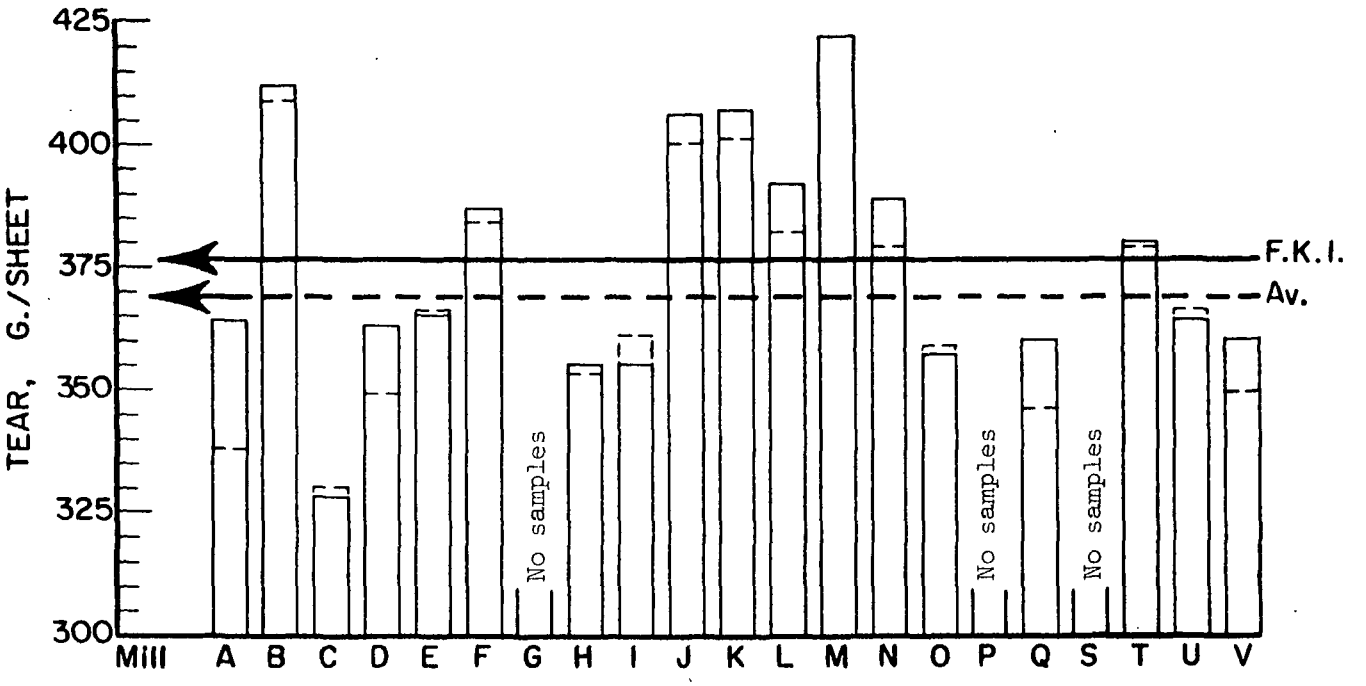

Figure 5. Comparison of Cross-Machine Direction Tear Results

——— Current machine average

- - - - - Cumulative machine average

Test	Current Mill Averages Max.	Min.	F.K.I. Averages Current	Cumulative
Basis weight, lb.	43.6	42.0	42.8	43.0
Caliper, points	13.5	11.8	12.7	12.6
Bursting strength, p.s.i. gage	114	103	109	112
Machine direction Elmendorf tear, g./sheet	387	267	330	323
Cross-machine direction Elmendorf tear, g./sheet	422	328	376	369

The test results obtained at the Institute and at the mill during April and May are given alphabetically in Tables IV to XXIV for each mill. Included in each of these tables are the maximum, minimum and average test data obtained at the Institute on each sample lot of linerboard. The data obtained at the Institute include also for each test the calculation of (1) a current mill average that represents the mean of the averages obtained on the individual sample lots of linerboard evaluated during the current period, (2) a cumulative mill average that represents the mean of the current mill averages for the previous twelve months excluding the current period, (3) a mill factor expressed in per cent that represents the ratio of the current mill average to the cumulative mill average, and (4) a mill index expressed in per cent that represents the ratio of the current mill average to the cumulative F.K.I. average. The term "mean" in the preceding discussion is synonymous with the simple arithmetic average. As mentioned above, the results presented in Tables IV to XXIV also include data obtained at the mills. The mill data include for each test (1) the average result obtained on each sample lot of linerboard and (2) a current mill average (calculated at the Institute) that represents the mean of the averages obtained on the individual sample lots of linerboard. In addition to the presentations of Institute and mill data described

TABLE IV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL A

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
3-28-62	WFIS	1	42.4	41.6	42.0	42.1	-0.1	14.5	13.8	14.1	13.5	-0.6	127	79	106	114	+ 8	312	200	257[a]	268	+11	400	336	352[a]	355	+ 3
3-29-62	WFIS	1	43.2	41.8	42.2	42.1	-0.1	13.0	12.5	12.9	12.5	-0.4	141	108	122	135	+13	304	240	277	304	+27	400	344	376[a]	361	-15
Current Mill Average:					42.1	42.1	0.0			13.5	13.0	-0.5			114	124	+10			267	286	+19			364	358	- 6
Cumulative Mill Average:					42.4					13.2					118					281					338		
Mill Factor, %					99.3					102.3					96.6					95.0					107.7		
Mill Index, %					97.9					107.1					101.8					82.7					98.6		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE V

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL B

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
3- 7-62	M.B.	-	44.8	44.0	44.2	44.2	0.0	13.2	12.6	13.0	12.8	-0.2	127	84	110	109	-1	432	352	388[a]	445	+57	448	376	415[a]	464	+49
2-25-62	M.B.	-	44.2	42.4	43.6	43.1	-0.5	13.9	12.6	13.1	12.9	-0.2	126	78	102	105	+3	416	352	389[a]	436	+47	464	352	419[a]	437	+18
3- 3-62	M.B.	-	46.0	44.0	44.5	43.8	-0.7	13.7	12.8	13.1	12.7	-0.4	135	90	109	112	+3	464	320	383[a]	415	+32	464	368	424[a]	453	+29
4-21-62	M.B.	-	44.2	42.4	43.9	43.8	-0.1	13.8	12.0	12.8	12.6	-0.2	122	86	106	113	+7	432	336	381[a]	387	+ 6	464	400	436[a]	408	-28
4-21-62	M.B.	-	43.6	42.0	42.4	42.6	+0.2	13.0	12.1	12.4	12.4	0.0	130	87	107	106	-1	416	320	361[a]	373	+12	432	352	393[a]	409	+16
4-26-62	M.B.	-	44.0	41.6	43.1	42.8	-0.3	13.6	12.3	13.0	13.0	0.0	123	85	106	107	+1	392	336	359[a]	363	+ 6	456	344	382[a]	412	+30
4-26-62	M.B.	-	44.0	42.4	43.4	42.9	-0.5	12.9	11.7	12.2	12.2	0.0	134	96	114	114	0	432	328	381[a]	403	-22	464	368	416[a]	441	+25
Current Mill Average:					43.6	43.3	-0.3			12.6	12.7	-0.1			108	109	-1			377	403	+26			412	432	+20
Cumulative Mill Average:					43.5					12.7					111					368					409		
Mill Factor, %					100.2					100.8					97.3					102.4					100.7		
Mill Index, %					101.4					101.6					96.4					116.7					111.7		

[a] This average includes the readings for one or more specimens which tore beyond the 5/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE VI

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL C

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
3-19-62	W.F.	1	42.0	40.6	41.8	42.0	+0.2	12.8	11.8	12.1	12.1	0.0	124	88	108	115	+7	344	264	293[a]	250	-43	360	312	333[a]	331	- 2
3-27-62	W.F.	1	42.0	41.6	41.9	41.9	0.0	12.6	12.0	12.2	12.0	-0.2	135	90	113	115	+2	336	256	281[a]	237	-44	376	296	327[a]	322	- 5
4- 4-62	W.F.	1	43.6	42.0	42.5	41.9	-0.6	12.7	11.7	12.2	12.0	-0.2	134	95	116	113	-3	336	256	284[a]	250	-34	368	288	327[a]	331	+ 4
4-11-62	W.F.	1	43.6	41.8	42.3	42.1	-0.2	12.4	12.0	12.1	12.0	-0.1	136	94	115	112	-3	336	224	285[a]	254	-31	352	272	323[a]	337	+14
4-19-62	W.F.	1	43.0	42.0	42.4	42.0	-0.4	12.5	11.9	12.2	12.0	-0.2	136	92	110	111	+1	352	232	287	254	-33	352	296	325[a]	337	+12
4-25-62	W.F.	1	42.2	41.4	42.0	41.9	-0.1	12.5	11.9	12.2	12.0	-0.2	130	92	113	114	+1	392	264	292[a]	252	-40	368	312	337[a]	326	-11
5- 3-62	W.F.	1	42.4	41.8	42.1	42.0	-0.1	12.3	12.0	12.1	12.2	+0.1	141	87	112	116	+4	320	240	284[a]	248	-36	360	296	322[a]	332	+10
5-11-62	W.F.	1	42.2	41.0	42.0	42.1	+0.1	12.8	11.9	12.1	12.0	-0.1	137	90	111	117	+6	320	240	290	241	-49	368	288	330[a]	322	- 8
Current Mill Average:					42.1	42.0	-0.1			12.1	12.1	0.0			112	114	+2			287	248	-39			328	330	+ 2
Cumulative Mill Average:					42.1					12.2					115					286					330		
Mill Factor, %					100.0					99.2					97.4					100.3					99.4		
Mill Index, %					97.9					96.0					100.0					88.9					88.9		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE VII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL D

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
3-19-62	W.F.	1	45.0	42.8	43.9	43.8	-0.1	13.6	12.2	12.8	12.7	-0.1	130	86	109	110	+1	328	240	284[a]	278	- 6	400	344	375[a]	380	+ 5
3-28-62	W.F.	1	44.6	42.4	43.8	43.0	-0.8	12.8	12.0	12.2	12.1	-0.1	132	89	113	110	-3	320	224	279	278	- 1	368	272	340[a]	361	+21
4- 3-62	W.F.	1	44.0	42.6	43.7	43.0	-0.7	12.9	12.0	12.3	12.1	-0.2	133	87	109	112	+3	336	256	304	298	- 6	384	320	363[a]	367	+ 4
4-13-62	W.F.	1	44.0	42.0	43.3	43.3	0.0	12.9	12.0	12.4	12.1	-0.3	137	84	108	114	+6	360	264	300[a]	292	- 8	376	336	360[a]	377	+17
4-19-62	W.F.	1	44.0	43.0	43.8	43.5	-0.3	12.9	12.0	12.4	12.2	-0.2	130	94	111	112	+1	352	272	317[a]	290	-27	400	352	372[a]	375	+ 3
5- 5-62	W.F.	1	44.0	42.2	43.4	43.2	-0.2	12.9	12.0	12.4	12.1	-0.3	139	83	108	111	+3	336	256	303	301	- 2	432	320	368[a]	371	+ 3
Current Mill Average:					43.6	43.3	-0.3			12.4	12.2	-0.2			110	112	+2			298	289	- 9			363	372	+ 9
Cumulative Mill Average:					43.4					12.8					111					294					349		
Mill Factor, %					100.5					96.9					99.1					101.4					104.0		
Mill Index, %					101.4					98.4					98.2					92.3					98.4		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE VIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL E

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
2-26-62	WFlS	1	42.6	40.6	42.1	42.2	+0.1	12.8	11.0	11.9	11.7	-0.2	134	89	114	111	- 3	400	272	329[a]	333	+ 4	368	320	344[a]	362	+18
2-27-62	WFlS	1	42.4	42.0	42.1	42.4	+0.3	12.5	11.0	11.9	11.5	-0.4	130	94	116	115	- 1	424	280	337[a]	319	-18	376	336	354[a]	341	-13
3-28-62	WFlS	1	42.6	41.6	42.0	42.5	+0.5	12.6	11.0	11.8	11.6	-0.2	132	96	115	114	- 1	400	296	333[a]	324	- 9	368	312	352[a]	350	- 2
3-29-62	WFlS	1	42.4	42.0	42.2	42.0	-0.2	13.3	12.5	13.0	12.8	-0.2	126	100	112	114	+ 2	368	240	319[a]	305	-14	408	352	377[a]	353	-24
3-30-62	WFlS	1	43.8	42.2	42.9	42.5	-0.4	12.9	12.0	12.2	11.9	-0.3	125	84	105	106	+ 1	400	320	353	335	-18	464	368	398[a]	380	-18
4-12-62	WFlS	1	42.2	40.8	41.8	41.9	+0.1	13.8	12.0	12.5	12.1	-0.4	140	85	110	113	+ 3	384	272	321	332	+11	400	320	363[a]	386	+23
4-15-62	WFlS	1	43.6	40.6	42.4	42.9	+0.5	13.7	12.0	12.8	12.4	-0.4	131	96	112	115	+ 3	360	240	307	326	+19	424	336	373[a]	379	+ 6
4-25-62	WFlS	1	42.2	41.8	42.0	42.5	+0.5	13.1	12.0	12.6	12.3	-0.3	142	90	108	112	+ 4	384	280	320	355	+35	432	336	365[a]	398	+33
4-26-62	WFlS	1	43.8	42.0	42.8	43.2	+0.4	14.3	13.2	13.9	13.2	-0.7	135	85	112	122	+10	400	272	337[a]	345	+ 8	400	336	363[a]	387	+24
Current Mill Average:					42.3	42.5	+0.2			12.5	12.2	-0.3			112	114	+ 2			328	331	+ 3			365	371	+ 6
Cumulative Mill Average:					42.8					13.3					111					323					366		
Mill Factor, %					98.8					94.0					100.9					101.5					99.7		
Mill Index, %					98.4					99.2					100.0					101.5					98.9		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE IX

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL F

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
3-10-62	W.F.	3	43.6	42.4	43.0	43.4	+0.4	13.3	12.3	13.0	12.7	-0.3	127	91	108	114	+6	376	288	343	---	---	440	352	393[a]	---	---
3-11-62	W.F.	3	43.8	42.0	42.6	43.5	+0.9	13.4	12.4	13.0	12.4	-0.6	127	81	110	117	+7	376	280	332[a]	---	---	448	360	402[a]	---	---
3-18-62	W.F.	3	44.2	42.6	43.3	43.7	+0.4	13.8	12.6	13.2	12.6	-0.6	141	88	110	113	+3	400	312	353[a]	341	-12	440	352	392[a]	389	- 3
3-20-62	W.F.	3	43.6	42.0	42.7	43.5	+0.8	13.9	12.8	13.2	12.7	-0.5	123	85	108	116	+8	384	288	317	335	+18	424	336	377[a]	376	- 1
4- 2-62	W.F.	3	44.0	42.2	43.2	43.2	0.0	13.2	12.8	13.0	12.6	-0.4	130	87	106	112	+6	352	288	325	332	+ 7	408	328	371[a]	391	+20
4- 5-62	W.F.	3	43.8	42.0	42.7	42.9	+0.2	13.3	12.7	13.0	12.6	-0.4	122	87	106	108	+2	352	272	308	355	+47	416	352	387[a]	419	+32
Current Mill Average:					42.9	43.4	+0.5			13.1	12.6	-0.5			108	113	+5			330	341	+11			387	394	+ 7
Cumulative Mill Average:					43.7					12.1					110					341					384		
Mill Factor, %					98.2					108.3					98.2					96.8					100.8		
Mill Index, %					99.8					104.0					96.4					102.2					104.9		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE X

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL G

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
No samples submitted.																											

TABLE XI

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL H

4- 5-62	W.F.	-	42.4	42.0	42.2	42.1	-0.1	12.3	11.9	12.1	11.9	-0.2	128	90	111	110	- 1	384	312	341[a]	329	-12	384	320	355[a]	353	- 2
4- 6-62	W.F.	-	43.2	41.8	42.2	42.2	0.0	13.2	12.2	12.9	12.3	-0.6	114	82	101	102	+ 1	368	280	313	301	-12	352	312	334[a]	348	+14
4-13-62	W.F.	-	43.8	42.2	43.2	43.1	-0.1	13.6	12.0	12.3	12.0	-0.3	130	92	115	120	+ 5	352	304	323[a]	340	+17	392	328	369[a]	381	+12
4-20-62	W.F.	-	43.8	42.8	43.4	43.5	+0.1	12.9	12.0	12.3	12.0	-0.3	122	92	109	112	+ 3	384	304	334[a]	338	+ 4	384	328	355[a]	345	-10
5- 3-62	W.F.	-	44.0	42.6	43.1	43.3	+0.2	12.9	12.1	12.5	12.2	-0.3	130	80	114	113	- 1	368	264	319[a]	324	+ 5	376	312	345[a]	343	- 2
5- 4-62	W.F.	-	44.4	43.0	43.8	43.9	+0.1	13.3	12.6	13.0	12.6	-0.4	130	91	109	120	+11	376	296	327[a]	325	- 2	416	344	372[a]	364	- 8
5-11-62	W.F.	-	43.2	42.0	42.3	43.2	+0.9	13.9	12.5	13.1	12.4	-0.7	124	100	110	114	+ 4	336	256	295[a]	303	+ 8	400	320	344[a]	363	+19
5-18-62	W.F.	-	42.8	42.2	42.4	42.5	+0.1	13.8	13.0	13.2	12.8	-0.4	122	92	107	118	+11	384	272	323	296	-27	400	328	364[a]	365	+ 1
Current Mill Average:					42.8	43.0	+0.2			12.7	12.3	-0.4			109	113	+ 4			322	320	- 2			355	358	+ 3
Cumulative Mill Average:					42.8					12.6					117					318					353		
Mill Factor, %					100.0					100.8					93.2					101.3					100.6		
Mill Index, %					99.5					100.8					97.3					99.7					96.2		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL I

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
3-12-62	W.F.	-	45.6	43.6	44.1	43.8	-0.3	13.0	10.9	12.2	12.1	-0.1	123	100	107	112	+5	400	320	353[a]	347	- 6	384	328	357[a]	381	+24
3-12-62	W.F.	-	43.0	40.0	42.0	42.0	0.0	12.8	10.9	12.2	12.1	-0.1	123	84	105	108	+3	376	296	341[a]	331	-10	400	320	360[a]	376	+16
4- 3-62	W.F.	-	43.2	42.0	42.4	43.1	+0.7	12.8	11.8	12.1	12.3	+0.2	125	81	106	111	+5	368	304	331[a]	310	-21	384	320	352[a]	354	+ 2
4- 3-62	W.F.	-	42.4	41.8	42.2	42.6	+0.4	12.7	11.9	12.2	12.3	+0.1	130	91	111	106	-5	384	304	337[a]	317	-20	400	336	365[a]	351	-14
5- 1-62	W.F.	-	43.6	42.0	42.4	42.6	+0.2	12.5	11.7	12.1	11.7	-0.4	120	85	103	105	+2	400	304	335	303	-32	408	328	351[a]	347	- 4
5- 1-62	W.F.	-	43.4	40.6	42.0	42.5	+0.5	12.7	11.6	12.0	12.0	0.0	130	90	108	106	-2	400	288	347[a]	311	-36	400	320	344[a]	355	+11
Current Mill Average:					42.5	42.8	+0.3			12.1	12.1	0.0			107	108	+1			341	320	-21			355	361	+ 6
Cumulative Mill Average:					42.7					12.3					113					342					361		
Mill Factor, %					99.5					98.4					94.7					99.7					98.3		
Mill Index, %					98.8					96.0					95.5					105.6					96.2		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL J

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff	Max.	Min.	Av.	Av.	Diff.
3-16-62	WF1S	2	44.0	41.4	42.9	42.5	-0.4	13.0	12.1	12.6	12.3	-0.3	127	78	105	110	+5	408	336	360	---	---	456	376	423[a]	---	---
4- 3-62	WF1S	1	44.0	42.0	43.0	42.7	-0.3	12.2	12.0	12.1	12.1	0.0	122	84	104	111	+7	392	312	348[a]	---	---	416	328	380[a]	---	---
4- 5-62	WF1S	1	43.2	41.6	42.2	41.8	-0.4	12.2	11.1	11.9	12.0	+0.1	120	90	101	107	+6	368	272	327	---	---	416	368	385[a]	---	---
4- 9-62	WF1S	2	45.6	44.0	44.5	44.5	0.0	13.2	12.9	13.0	13.1	+0.1	125	88	105	114	+9	432	336	373[a]	---	---	480	352	417[a]	---	---
4-10-62	WF1S	2	46.0	43.8	45.4	44.8	-0.6	13.2	12.3	12.9	12.8	-0.1	125	73	104	107	+3	464	352	405[a]	---	---	496	368	425[a]	---	---
Current Mill Average:					43.6	43.3	-0.3			12.5	12.5	0.0			104	110	+6			363	---	---			406	---	---
Cumulative Mill Average:					43.3					12.6					105					358					400		
Mill Factor, %					100.7					99.2					99.0					101.4					101.5		
Mill Index, %					101.4					99.2					92.9					112.4					110.0		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL K

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
3-29-62	W.B.	-	44.2	42.4	43.4	42.7	-0.7	12.2	11.3	11.9	11.5	-0.4	126	92	111	113	+2	400	296	360	305	-55	464	384	414[a]	396	-18
3-31-62	W.B.	-	44.2	42.4	43.7	42.9	-0.8	12.1	11.6	12.0	11.5	-0.5	134	87	112	115	+3	432	336	373[a]	339	-34	496	384	425[a]	428	+ 3
4-11-62	W.B.	-	44.0	41.4	42.6	42.7	+0.1	12.0	10.8	11.5	11.4	-0.1	120	84	103	111	+8	400	280	339	317	-22	440	368	406[a]	381	-25
4-22-62	W.B.	-	43.6	42.0	42.4	42.5	+0.1	12.3	11.4	11.9	11.5	-0.4	127	83	103	107	+4	384	288	336	353	+17	416	344	395[a]	407	-12
5- 5-62	W.B.	-	44.2	42.4	43.2	43.0	-0.2	12.8	11.7	12.2	11.7	-0.5	140	95	111	116	+5	400	320	365[a]	327	-38	448	376	409[a]	399	-10
5-14-62	W.B.	-	43.8	42.0	42.7	42.3	-0.4	12.1	11.0	11.6	11.4	-0.2	137	93	112	117	+5	400	280	343	315	-28	416	360	385[a]	383	- 2
5-15-62	W.B.	-	44.0	42.0	42.5	42.3	-0.2	12.1	11.0	11.6	11.3	-0.3	122	88	106	110	+4	400	280	350	317	-33	432	384	413[a]	380	-33
Current Mill Average:					42.9	42.6	-0.3			11.8	11.5	-0.3			108	113	+5			352	325	-27			407	396	-11
Cumulative Mill Average:					42.8					12.1					109					362					401		
Mill Factor, ¢					100.2					97.5					99.1					97.2					101.5		
Mill Index, ¢					99.8					93.7					96.4					109.0					110.3		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL L

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.
3-14-62	W.F.	2	44.0	42.4	43.3	42.6	-0.7	12.9	11.6	12.2	11.9	-0.3	130	91	107	108	+1	376	272	320[a]	293	-27	416	336	375[a]	334	-41
3-16-62	W.F.	2	43.6	42.2	42.9	42.6	-0.3	12.2	11.9	12.0	12.0	0.0	127	90	109	112	+3	352	272	311[a]	288	-23	432	320	376[a]	344	-32
4-24-62	W.F.	2	42.4	41.6	42.0	42.8	+0.8	13.7	12.1	12.7	12.5	-0.2	117	87	106	108	+2	352	272	308[a]	305	- 3	432	352	400[a]	406	+ 6
4-25-62	W.F.	2	43.8	42.2	43.0	43.7	+0.7	13.3	12.3	12.8	12.8	0.0	126	88	111	113	+2	408	304	339[a]	346	+ 7	432	352	392[a]	426	+34
5- 4-62	W.F.	2	43.6	42.0	42.5	43.0	+0.5	13.0	12.0	12.4	12.5	+0.1	136	85	109	109	0	384	272	315	315	0	432	352	387[a]	390	+ 3
5- 6-62	W.F.	2	44.2	42.6	43.6	43.9	+0.3	12.5	12.0	12.2	12.2	0.0	133	95	113	115	+2	384	272	341	321	-20	456	368	405[a]	410	+ 5
5-10-62	W.F.	2	44.0	43.6	43.8	43.9	+0.1	12.7	12.0	12.2	12.2	0.0	127	99	113	113	0	384	296	332	331	- 1	480	368	398[a]	416	+18
5-15-62	W.F.	2	44.0	42.4	43.5	43.9	+0.4	12.8	12.0	12.2	12.1	-0.1	131	82	114	115	+1	408	296	345	330	-15	416	368	401[a]	411	+10
Current Mill Average:					43.1	43.3	+0.2			12.3	12.3	0.0			110	112	+2			326	316	-10			392	392	0
Cumulative Mill Average:					43.4					12.5					114					323					382		
Mill Factor, %					99.3					98.4					96.5					100.9					102.6		
Mill Index, %					100.2					97.6					98.2					100.9					106.2		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XVI

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL M

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
4-14-62	MSF	1	42.2	41.8	42.0	41.6	-0.4	13.4	12.0	12.6	12.4	-0.2	141	88	110	114	+ 4	432	360	396	324	-72	464	384	412[a]	382	-30
4-26-62	MSF	1	42.4	41.4	42.0	42.5	+0.5	12.8	11.4	12.2	12.0	-0.2	125	91	109	124	+15	464	328	379[a]	359	-20	456	408	431[a]	398	-33
Current Mill Average:					42.0	42.0	0.0			12.4	12.2	-0.2			110	119	+ 9			387	341	-46			422	390	-32
Cumulative Mill Average:					----					----					---					---					---		
Mill Factor, %					----					----					---					---					---		
Mill Index, %					97.7					98.4					98.2					119.8					114.4		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XVII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL N

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
3- 2-62	WFlS	2	44.2	42.0	43.0	43.0	0.0	14.9	13.9	14.3	13.9	-0.4	117	72	96	103	+7	432	280	351	376	+25	480	368	411[a]	446	+35
4-13-62	WFlS	2	44.0	42.2	43.1	43.0	-0.1	13.6	12.3	13.0	12.4	-0.6	134	95	115	118	+3	400	280	337[a]	329	- 8	416	352	390[a]	399	+ 9
4-17-62	WFlS	2	42.8	41.6	42.1	42.6	+0.5	13.2	12.8	13.0	12.9	-0.1	124	90	108	108	0	424	256	321	318	- 3	400	328	365[a]	365	0
4-18-62	WFlS	2	44.0	42.2	43.3	43.1	-0.2	13.2	12.7	13.0	12.9	-0.1	130	99	113	112	-1	384	304	339[a]	329	-10	440	360	401[a]	396	- 5
5- 7-62	WFlS	2	43.6	41.8	42.5	42.6	-0.1	14.1	13.1	13.7	13.0	-0.7	130	85	106	110	+4	368	288	308	357	+49	464	352	398[a]	398	0
5- 4-62	WFlS	2	44.0	41.8	42.8	42.6	-0.2	13.9	12.8	13.2	12.9	-0.3	135	88	110	112	+2	368	264	319	322	+ 3	400	336	369[a]	380	+11
Current Mill Average:					42.8	42.8	0.0			13.4	13.0	-0.4			108	111	+3			329	338	+ 9			389	397	+ 8
Cumulative Mill Average:					43.0					13.2					111					331					379		
Mill Factor, %					99.5					101.5					97.3					99.4					102.6		
Mill Index, %					99.5					106.3					96.4					101.9					105.4		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XVIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL C

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
3-18-62	W.F.	1	43.0	42.0	42.3	42.7	+0.4	13.4	11.9	12.6	12.5	-0.1	124	86	105	110	+5	376	264	297[a]	330	+33	416	320	356[a]	383	+27
3-20-62	W.F.	1	44.2	42.0	43.3	43.6	+0.3	13.4	12.2	12.9	12.9	0.0	140	84	112	115	+3	320	264	293[a]	334	+41	376	312	344[a]	398	+54
3-22-62	W.F.	1	44.0	42.0	42.9	43.1	+0.2	13.4	12.1	12.8	12.8	0.0	130	92	111	115	+4	320	248	284[a]	314	+30	352	312	331[a]	384	+54
3-24-62	W.F.	1	43.8	42.0	42.7	42.8	+0.1	13.2	12.0	12.7	12.7	0.0	125	86	108	110	+2	368	264	309	335	+26	400	304	361[a]	410	+49
4- 4-62	W.F.	1	44.4	42.8	43.8	43.8	0.0	13.0	12.0	12.6	12.7	+0.1	122	85	106	110	+4	344	240	299	327	+28	392	312	353[a]	395	+42
4- 5-62	W.F.	1	44.2	43.8	44.0	43.9	-0.1	13.3	12.4	12.8	12.7	-0.1	125	80	105	112	+7	368	280	325	329	+ 4	432	344	392[a]	411	+19
4- 6-62	W.F.	1	43.2	42.0	42.5	43.0	+0.5	12.6	11.8	12.2	12.7	+0.5	126	86	105	112	+7	352	272	305	343	+38	416	336	376[a]	409	+33
4- 8-62	W.F.	1	44.2	42.2	43.2	43.4	+0.2	13.2	12.4	12.8	12.8	0.0	124	88	105	110	+5	384	280	313	332	+19	400	344	365[a]	406	+41
4-14-62	W.F.	1	44.0	42.0	43.0	43.2	+0.2	12.9	11.9	12.1	12.1	0.0	125	85	108	115	+7	328	272	288	328	+40	384	320	347[a]	406	+59
4-24-62	W.F.	1	43.8	41.3	42.4	42.9	+0.5	13.9	13.0	13.3	13.4	+0.1	124	89	105	111	+6	384	264	308	328	+20	368	320	345[a]	395	+50
4-26-62	W.F.	1	42.6	41.0	42.0	42.3	+0.3	12.8	11.5	12.0	11.5	-0.5	125	82	106	112	+6	352	240	293	320	+27	384	320	348[a]	389	+41
4-25-62	W.F.	1	43.6	41.8	42.4	42.9	+0.5	12.8	11.3	12.1	11.5	-0.6	123	90	107	112	+5	352	272	301[a]	324	+23	368	320	343[a]	399	+56
5- 2-62	W.F.	1	44.0	42.4	43.6	43.8	-0.2	12.8	11.7	12.1	11.7	-0.4	130	96	111	115	+4	344	272	303	327	+24	416	336	373[a]	398	+25
5- 4-62	W.F.	1	43.8	41.8	42.2	42.2	0.0	12.8	11.5	12.1	11.8	-0.3	117	89	101	105	+4	320	240	278	303	+25	416	320	349[a]	369	+20
5- 9-62	W.F.	1	44.2	41.6	43.0	43.7	-0.7	12.7	11.6	12.1	12.1	0.0	127	90	109	114	+5	352	232	292	337	+45	448	320	359[a]	404	+45
5-15-62	W.F.	1	44.0	42.2	43.4	43.7	-0.3	12.8	12.0	12.2	11.9	-0.3	131	85	108	111	+3	368	264	321	331	+10	408	336	373[a]	398	+25
Current Mill Average:					42.9	43.2	+0.3			12.5	12.4	-0.1			107	112	+5			300	328	+28			357	397	+40
Cumulative Mill Average:					43.1					12.4					110					298					359		
Mill Factor, %					99.5					100.8					97.3					100.7					99.4		
Mill Index, %					99.8					99.2					95.5					92.9					96.7		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIX

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL P

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.
No samples submitted.																										

TABLE XX

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL Q

3-27-62	WFlS	2	43.0	41.0	42.0	42.7	+0.7	13.9	13.0	13.2	13.2	0.0	141	88	115	114	- 1	336	248	296[a]	304	+ 8	400	344	379[a]	417	+38
4- 5-62	WFlS	2	43.8	41.0	42.1	42.8	+0.7	14.0	12.7	13.1	12.8	-0.3	140	86	111	108	- 3	368	248	295	328	+33	384	312	350[a]	407	+57
4- 5-62	WFlS	2	42.4	42.0	42.1	42.7	+0.6	13.7	12.9	13.1	13.2	+0.1	142	80	114	124	+10	416	272	317	316	- 1	432	336	380[a]	413	+33
4-10-62	WFlS	2	42.4	41.8	42.2	42.4	+0.2	13.3	12.8	13.0	12.8	-0.2	130	81	109	108	- 1	304	224	279[a]	297	+18	400	320	348[a]	403	+55
4-28-62	WFlS	2	44.0	42.0	42.7	43.2	+0.5	14.7	13.2	14.2	14.0	-0.2	139	70	103	110	+ 7	384	272	303	325	+22	400	320	351[a]	422	+71
5- 1-62	WFlS	2	43.6	41.6	42.4	43.1	+0.7	13.8	13.0	13.3	13.0	-0.3	127	82	102	112	+10	360	272	309[a]	338	+29	392	320	355[a]	450	+95
5- 9-62	WFlS	2	43.8	41.6	42.4	42.4	0.0	13.8	12.6	13.1	13.2	+0.1	133	89	108	114	+ 6	368	272	316	356	+40	416	320	361[a]	440	+79
5-14-62	WFlS	2	43.6	42.0	42.6	43.7	+1.1	14.8	13.9	14.2	14.0	-0.2	130	82	105	109	+ 4	352	256	296[a]	340	+44	416	320	357[a]	412	+55
Current Mill Average:					42.3	42.9	+0.6			13.4	13.3	-0.1			108	112	+ 4			301	326	+25			360	420	+60
Cumulative Mill Average:					42.4					13.1					113					308					346		
Mill Factor, %					99.8					102.3					95.6					97.7					104.0		
Mill Index, %					98.4					106.3					96.4					93.2					97.6		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXI

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL S

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
No samples submitted.																											

TABLE XXII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL T

3-16-62	WFlS	1	43.6	42.0	42.3	42.6	+0.3	13.1	12.2	12.7	12.6	-0.1	127	93	112	104	-8	352	264	297	337	+40	384	320	357[a]	403	+46
3-19-62	WFlS	1	43.8	42.2	42.9	42.8	-0.1	13.4	12.3	12.9	12.4	-0.5	128	91	112	105	-7	328	248	293	333	+40	488	312	380[a]	403	+23
4- 3-62	WFlS	1	43.8	42.0	42.6	42.7	+0.1	13.1	12.4	12.8	12.5	-0.3	135	87	109	111	+2	328	240	287	311	+24	424	336	388[a]	401	+13
4-11-62	WFlS	1	44.0	42.2	43.4	42.8	-0.6	13.4	12.1	12.9	12.8	-0.1	128	91	110	109	-1	352	240	308	295	-13	408	336	366[a]	384	+18
4-17-62	WFlS	1	43.8	42.2	42.7	42.4	-0.3	13.2	12.0	12.7	12.6	-0.1	130	83	109	107	-2	320	264	295	333	+38	424	328	373[a]	405	+32
4-23-62	WFlS	1	43.6	42.0	42.8	42.9	+0.1	13.9	12.0	12.8	12.8	0.0	128	92	109	109	0	392	280	319[a]	311	- 8	400	336	368[a]	394	+26
5- 1-62	WFlS	1	42.6	42.0	42.2	42.8	+0.6	13.5	12.0	12.9	12.8	-0.1	134	88	108	110	+2	344	280	324[a]	307	-17	464	344	399[a]	400	+ 1
5- 7-62	WFlS	1	43.2	42.0	42.3	43.1	+0.8	13.2	12.3	12.9	13.0	-0.1	127	90	105	107	+2	336	264	296[a]	297	+ 1	400	336	381[a]	375	- 6
5-14-62	WFlS	1	43.0	41.8	42.3	42.7	+0.4	13.5	12.4	13.0	12.8	-0.2	136	93	109	106	-3	352	272	309	342	+33	480	352	407[a]	419	+12
Current Mill Average:					42.6	42.8	+0.2			12.8	12.7	-0.1			109	108	-1			303	319	+16			380	398	+18
Cumulative Mill Average:					42.6					12.6					112					312					379		
Mill Factor, %					100.0					101.6					97.3					97.1					100.3		
Mill Index,					99.1					101.6					97.3					93.8					103.0		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL U

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
3-12-62	----	1	43.6	41.4	42.3	42.4	+0.1	14.0	12.9	13.4	12.7	-0.7	128	72	99	100	+1	400	304	354[a]	316	-38	416	344	376[a]	358	-18
3-23-62	----	1	43.8	41.8	42.8	42.3	-0.5	13.7	12.4	13.1	12.6	-0.5	124	84	101	101	0	352	256	303[a]	268	-35	352	304	329[a]	331	+ 2
4- 4-62	----	1	44.2	42.4	43.7	43.0	-0.7	13.8	12.6	13.2	12.6	-0.6	134	87	109	109	0	368	256	319[a]	279	-40	432	352	381[a]	366	-15
4-12-62	----	1	44.0	41.8	43.0	42.5	-0.5	13.9	12.8	13.4	12.6	-0.8	123	80	102	103	+1	384	256	322[a]	289	-33	384	312	359[a]	371	+12
4-16-62	----	1	44.4	41.8	43.2	43.2	0.0	14.8	13.0	13.9	13.5	-0.4	119	75	96	101	+5	400	248	319[a]	310	- 9	368	288	342[a]	382	+40
4-23-62	----	1	44.2	40.6	43.1	43.2	+0.1	13.8	12.8	13.2	13.0	-0.2	133	83	111	112	+1	392	280	326[a]	288	-38	408	336	381[a]	364	-17
5- 1-62	----	1	44.4	42.0	43.5	42.6	-0.9	14.0	12.9	13.3	12.7	-0.6	128	82	104	102	-2	400	272	319[a]	295	-24	448	336	377[a]	374	- 3
Current Mill Average:					43.1	42.7	-0.4			13.4	12.8	-0.6			103	104	+1			323	292	-31			364	364	0
Cumulative Mill Average:					43.2					13.1					109					319					366		
Mill Factor, %					99.8					102.3					94.5					101.3					99.5		
Mill Index, %					100.2					106.3					92.0					100.0					98.6		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXIV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL V

April and May, 1962

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Basis Weight, lb. Institute Min.	Basis Weight, lb. Institute Av.	Basis Weight, lb. Mill Av.	Basis Weight, lb. Diff.	Caliper, points Institute Max.	Caliper, points Institute Min.	Caliper, points Institute Av.	Caliper, points Mill Av.	Caliper, points Diff.	Bursting Strength, p.s.i. gage Institute Max.	Bursting Strength, p.s.i. gage Institute Min.	Bursting Strength, p.s.i. gage Institute Av.	Bursting Strength, p.s.i. gage Mill Av.	Bursting Strength, p.s.i. gage Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Elmendorf Tear, g./sheet In Machine Institute Min.	Elmendorf Tear, g./sheet In Machine Institute Av.	Elmendorf Tear, g./sheet In Machine Mill Av.	Elmendorf Tear, g./sheet In Machine Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Elmendorf Tear, g./sheet Cross Machine Institute Min.	Elmendorf Tear, g./sheet Cross Machine Institute Av.	Elmendorf Tear, g./sheet Cross Machine Mill Av.	Elmendorf Tear, g./sheet Cross Machine Diff.
4-18-62	W.F.	2	44.2	42.8	43.4	43.2	-0.2	12.9	11.8	12.2	11.9	-0.3	122	90	105	113	+8	336	248	298	325	+27	424	312	351[a]	358	+7
4-26-62	W.F.	1[b]	42.8	42.0	42.3	43.1	+0.8	12.2	11.5	11.9	11.8	-0.1	137	73	109	110	+1	336	264	295[a]	312	+17	408	336	370[a]	373	+3
Current Mill Average:					42.9	43.2	+0.3			12.0	11.8	-0.2			107	111	+4			296	318	+22			360	365	+5
Cumulative Mill Average:					43.0					12.1					114					308					349		
Mill Factor, %					99.8					99.2					93.9					96.1					103.2		
Mill Index, %					99.8					95.2					95.5					91.6					97.6		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

[b]The sample received by the Institute gave the machine number as No. 1. The mill data sheet lists the machine number as No. 2.

Note: All "current mill average" data are calculated from the totals of the individual readings.

above, Tables IV through XXIV also include under each test heading a column labeled "Diff." This column shows the differences between averages obtained at the Institute and those obtained at the mills. The data obtained at the Institute are used as the reference in calculating these differences.

The average test results obtained at the Institute and at the mills are summarized in Table XXV for the current period. Shown in this table for each mill is the difference for each test between the current mill average based on Institute data and the current mill average based on mill data. In addition, for each test the maximum difference encountered in comparing Institute and mill averages for individual sample lots is shown. In Table XXVI, the differences for each test between the current mill averages based on Institute data and those based on mill data shown in Table XXV have been converted to per cent (based on Institute data as a reference). In addition, for purposes of comparison, the percentage differences from the previous bimonthly report are shown.

A summary of the agreement obtained in the comparisons of Institute and mill test data for the current period is shown in Table XXVII. This summary is based on the results given in Table XXVI. The tabulated data show the number of mills, and the percentage of all mills which this number represents, whose average test results for the current period fall within designated percentages from the average test results obtained at the Institute. It may be noted from this summary that agreement between the results obtained at the Institute and those obtained at the mills was generally very good.

Preconditioning and conditioning data pertinent to the test results obtained at the mills during the current period are given in Table XXVIII.

TABLE XXV

SUMMARY OF TEST RESULT COMPARISONS (Average Mill and Institute Results)

Mills[a]	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S	T	U	V
No. of samples compared	2	7	8	6	9	6	0	8	6	5	7	8	2	6	16	0	8	0	9	7	2
Basis Weight																					
Institute	42.1	43.6	42.1	43.6	42.3	42.9		42.8	42.5	43.6	42.9	43.1	42.0	42.8	42.9		42.3		42.6	43.1	42.9
Mill	42.1	43.3	42.0	43.3	42.5	43.4		43.0	42.8	43.3	42.6	43.3	42.0	42.8	43.2		42.9		42.8	42.7	43.2
Av. diff.[b]	0.0	-0.3	-0.1	-0.3	+0.3	+0.5		+0.2	+0.3	-0.3	-0.3	+0.3	0.0	0.0	+0.3		+0.6		+0.2	-0.4	+0.3
Max. diff.[c]	±0.1	-0.7	-0.6	-0.8	+0.5	+0.9		+0.9	+0.7	-0.6	-0.8	+0.8	+0.5	+0.5	+0.7		+1.1		+0.8	-0.9	+0.8
Caliper																					
Institute	13.5	12.8	12.1	12.4	12.5	13.1		12.7	12.1	12.5	11.8	12.3	12.4	13.4	12.5		13.4		12.8	13.4	12.0
Mill	13.0	12.7	12.1	12.2	12.2	12.6		12.3	12.1	12.5	11.5	12.3	12.2	13.0	12.4		13.3		12.7	12.8	11.8
Av. diff.[b]	-0.5	-0.1	0.0	-0.2	-0.3	-0.5		-0.4	0.0	0.0	-0.3	0.0	-0.2	-0.4	-0.1		-0.1		-0.1	-0.6	-0.2
Max. diff.[c]	-0.6	-0.4	-0.2	-0.3	-0.7	-0.6		-0.7	-0.4	-0.3	-0.5	-0.3	-0.2	-0.7	-0.6		-0.3		-0.5	-0.8	-0.3
Bursting Strength																					
Institute	114	108	112	110	112	108		109	107	104	108	110	110	108	107		108		109	103	107
Mill	124	109	114	112	114	113		113	108	110	113	112	119	111	112		112		108	104	111
Av. diff.[b]	+10	+1	+2	+2	+2	+5		+4	+1	+6	+5	+2	+9	+3	+5		+4		-1	+1	+4
Max. diff.[c]	+13	+7	+7	+6	+10	+8		+11	±5	+9	+8	+3	+15	+7	+7		+10		-8	+5	+8
Tearing Strength, in																					
Institute	267	377	287	298	328	330		322	341	363	352	326	387	329	300		301		303	323	296
Mill	286	403	248	289	331	341		320	320	--	325	316	341	338	328		326		319	292	318
Av. diff.[b]	+19	+26	-39	-9	+3	+11		-2	-21	--	-27	-10	-46	+9	+28		+25		+16	-31	+22
Max. diff.[c]	+27	+57	-49	-27	+35	+47		-27	-36	--	-55	-27	-72	+49	+45		+44		+40	-40	+27
Tearing Strength, cross																					
Institute	364	412	328	363	365	387		355	355	406	407	392	422	389	357		360		380	364	360
Mill	358	432	330	372	371	394		358	361	--	396	392	390	397	397		420		398	364	365
Av. diff.[b]	-6	+20	+2	+9	+6	+7		+3	+6	--	-11	0	-32	+8	+40		+60		+18	0	+5
Max. diff.[c]	-15	+49	+14	+21	+33	+32		+19	+24	--	-33	-41	-33	+35	+59		+95		+46	+40	+7

[a]
[b] Comparison based on averages involved only those samples on which mill test data were submitted.
[c] Average difference is the difference between the Institute mill average and the mill average based on mill test data.
Maximum difference encountered in comparing the Institute average and the mill averages for any sample submitted by that particular mill.

TABLE XXVI

COMPARISON OF INSTITUTE-MILL DIFFERENCES FOR APRIL AND MAY, 1962
(Average Difference, per cent)

Mill	Period	Basis Weight	Caliper	Bursting Strength	Tear, in	Tear, cross	Mill	Period	Basis Weight	Caliper	Bursting Strength	Tear, in	Tear, cross
A	Dec.-Jan.	+0.5	-2	+6	+5	+4	K	Dec.-Jan.	-2	-4	-0.9	-11	-5
	Feb.-March	-0.2	-2	+4	+5	+7		Feb.-March	-1	-4	+0.9	-11	-5
	Current	0	-4	+9	+7	-2		Current	-0.7	-3	+5	-8	-3
B	Dec.-Jan.	-0.5	-3	-4	+8	+3	L	Dec.-Jan.	-0.5	-2	-3	0	+4
	Feb.-March	-1	-2	-2	+9	+8		Feb.-March	0	-2	-2	-2	-3
	Current	-0.7	-0.8	+0.9	+7	+5		Current	+0.5	0	+2	-3	0
C	Dec.-Jan.	-0.2	-0.8	-3	-13	+0.3	M	Dec.-Jan.	--	--	--	--	--
	Feb.-March	-0.2	-2	-0.9	-14	-2		Feb.-March	--	--	--	--	--
	Current	-0.2	0	+2	-14	+0.6		Current	0	-2	+8	-12	-8
D	Dec.-Jan.	-2	--	-0.9	-3	+3	N	Dec.-Jan.	-0.2	-3	0	+2	+12
	Feb.-March	-0.9	-2	0	-5	+1		Feb.-March	-0.5	-2	-0.9	+6	+10
	Current	-0.7	-2	+2	-3	+2		Current	0	-3	+3	+3	+2
E	Dec.-Jan.	-0.5	-3	-3	+0.6	+1	O	Dec.-Jan.	+0.5	-0.8	+2	+5	+5
	Feb.-March	0	-3	-4	-2	-0.8		Feb.-March	+0.9	0	+0.9	+13	+12
	Current	+0.5	-2	+2	+0.9	+2		Current	+0.7	-0.8	+5	+9	+11
F	Dec.-Jan.	+0.7	-3	0	-7	-3	P	Dec.-Jan.	--	--	--	--	--
	Feb.-March	+2	-2	+2	+3	+8		Feb.-March	--	--	--	--	--
	Current	+1	-4	+5	+3	+2		Current	--	--	--	--	--
G	Dec.-Jan.	--	--	--	--	--	Q	Dec.-Jan.	+2	0	-2	+10	+10
	Feb.-March	--	--	--	--	--		Feb.-March	+1	-2	0	+4	+12
	Current	--	--	--	--	--		Current	+1	-0.7	+4	+8	+17
H	Dec.-Jan.	+0.2	-3	-3	-7	-0.8	S	Dec.-Jan.	--	--	--	--	--
	Feb.-March	+0.5	-2	-0.9	-5	-3		Feb.-March	--	--	--	--	--
	Current	+0.5	-3	+4	-0.6	+0.8		Current	--	--	--	--	--
I	Dec.-Jan.	+1	-0.8	-3	-7	+2	T	Dec.-Jan.	-0.5	-2	-4	+4	+2
	Feb.-March	+0.5	0	-7	+3	+6		Feb.-March	+0.9	0	-3	+10	+10
	Current	+0.7	0	+0.9	-6	+2		Current	+0.5	-0.8	-0.9	+5	+5
J	Dec.-Jan.	-0.5	-6	+2	--	--	U	Dec.-Jan.	0	-4	0	-2	+6
	Feb.-March	-0.7	-0.8	+0.9	--	--		Feb.-March	+0.5	-5	0	-5	+4
	Current	-0.7	0	+6	--	--		Current	-0.9	-4	+1	-10	0
							V	Dec.-Jan.	-0.2	-2	-2	+1	+6
								Feb.-March	+0.7	-2	+0.9	+2	+6
								Current	+0.7	-2	+4	+7	+1

TABLE XXVII

SUMMARY OF AGREEMENT BETWEEN INSTITUTE AND MILL RESULTS

	Average Percentage Difference Between Institute and Mill Test Results								
	±0.5	±1	±2	±3	±4	±5	±7.5	±10	±17
Basis weight									
Number of mills	8	18							
Percentage of all mills	44.4	100.0							
Caliper									
Number of mills	4	8	12	15	18				
Percentage of all mills	22.2	44.4	66.7	83.3	100.0				
Bursting strength									
Number of mills	0	4	8	9	12	15	16	18	
Percentage of all mills	0.0	22.2	44.4	50.0	66.7	83.3	88.9	100.0	
Tearing strength, in									
Number of mills	0	2	2	6	6	7	11	15	17
Percentage of all mills	0.0	11.8	11.8	35.3	35.3	41.2	64.7	88.2	100.0
Tearing strength, across									
Number of mills	2	5	11	12	12	14	14	15	17
Percentage of all mills	11.8	29.4	64.7	70.6	70.6	82.4	82.4	88.2	100.0

TABLE XXVIII

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS

Mill Code	Preconditioning			Conditioning		
	Relative Humidity, %	Temperature, °F.	Time, hr.	Relative Humidity, %	Temperature, %	Time, hr.
A	44-50	73-74	120	44-50	73-74	120
B	49-51	72-74	48	50	73	--
C		None		40-75	72-94	--
D	34-42	61-76	0.5	50	73	24
E	50	70	24	50	70-72	24
F		None		50	73	24
G			No samples submitted			
H	34-35	77-78	8	48-52	71-73	16
I		None		50	73	24
J		None		50	73	120-288
K		None		47-52	73-74	48
L	50	73	24	50	73	24
M	50	73	24-36	40	78	--
N	50	72	120	50	72	120
O	35	73	24	50	73	48
P			No samples submitted			
Q	50	72	24		None	
S			No samples submitted			
T		None		56-58	70-72	--
U	50-52	72-77	48	50-52	72-77	3-4
V		None		50	73	24

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